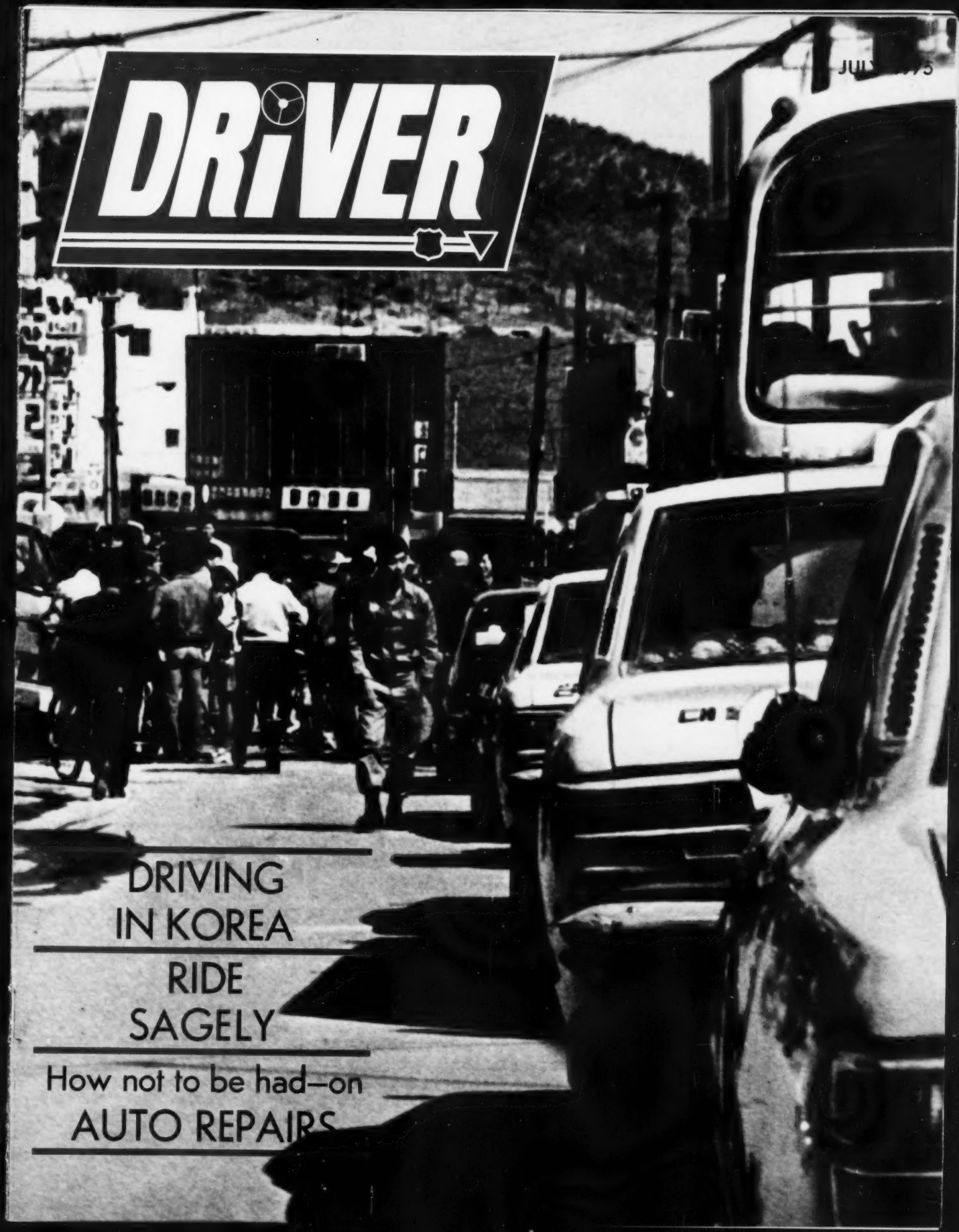
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DRIVING
IN KOREA
RIDE
SAGELY
How not to be had—on
AUTO REPAIRS

DRIVER

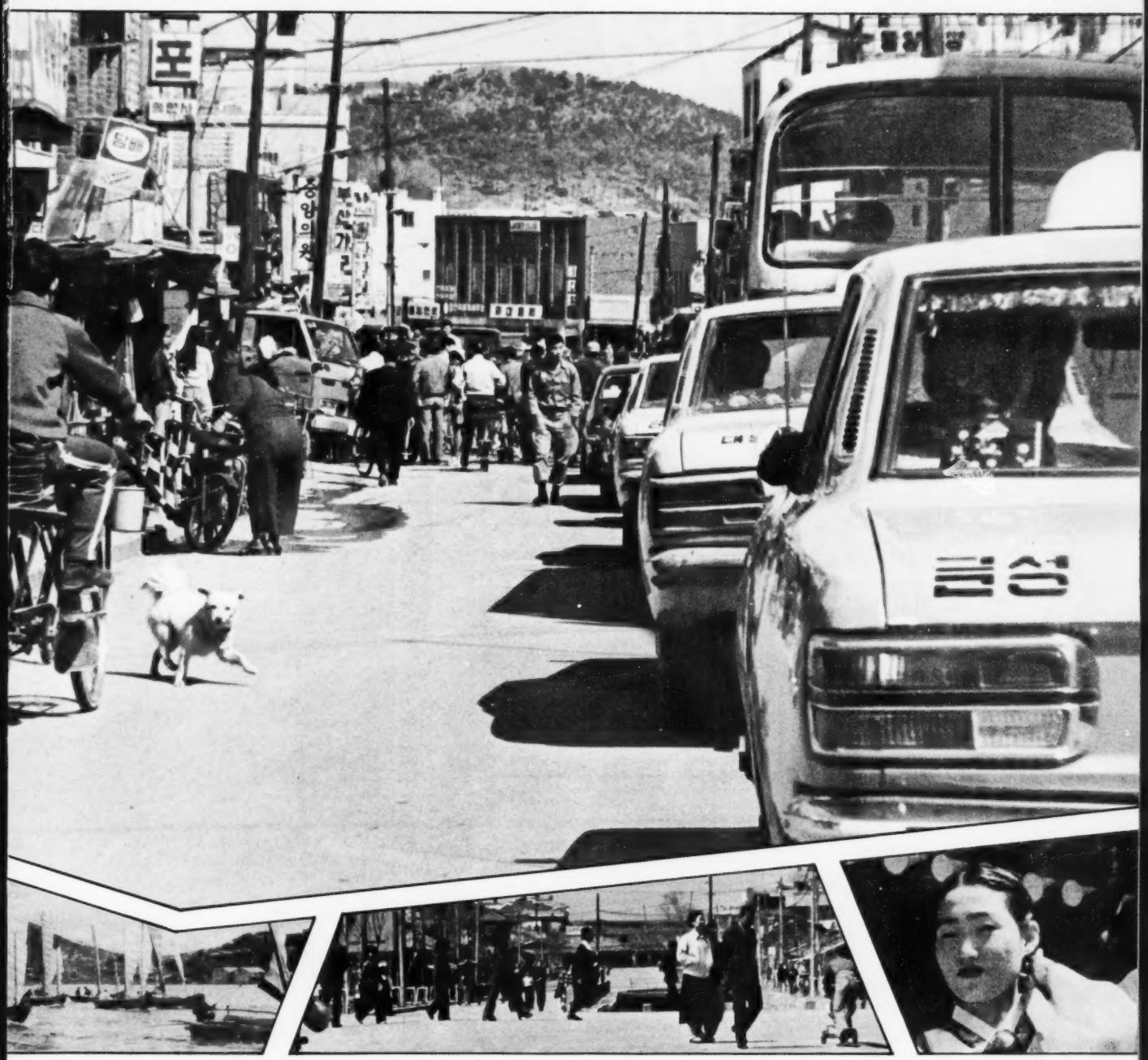
DRIVING IN KOREA

IT'S DIFFERENT

Korea. It's known as the "Land of Morning Calm." But to an American accustomed to the relatively disciplined traffic on U.S. highways, the pattern of traffic on Korea's highways makes the land seem anything but calm. And for the unwary, the first sojourn on this country's roads can be a frightening experience.

Korea is a country rich in centuries-old tradition, but heavy motor vehicle traffic is something new. Since 1966, the number of motor vehicles on Korean highways has increased approximately 400%. The construction of new roads has not kept pace with this growth, and when combined with a population density of over 700 persons per square mile the situation, put succinctly, is orchestrated chaos. Korea has one of the highest traffic accident rates in the world.

There are 42,000 U.S. Forces personnel in Korea, with an estimated 20,000 dependents. A large number of these people operate privately-owned vehicles (POVs), and figure



significantly in the high accident rates.

The normal American reaction to driving in Korea, caused by unfamiliarity with the country, is frustration. This frustration often leads to carelessness and, bingo, you have an accident. As trite as it might sound, it then seems logical to say that a thorough knowledge of local conditions

continued

by Captain CHARLES RAY (U.S. Army)

HQ USAGY
APO San Francisco 96301

DRIVER

THE TRAFFIC SAFETY MAGAZINE FOR THE MILITARY DRIVER

JULY 1975

VOLUME 9 NUMBER 2

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THE EDITOR SPEAKS

DOUBLE CLUTCH

CRIME ON THE STREET

DRIVER has never been much for quoting statistics, but here are some that can't help but interest you readers. They compare the cost of crime, which worries us all, with the cost of traffic accidents. They are quoted from Jerry V. Wilson, recently retired Chief of Police in D.C., and first appeared in the **Washington Post.**

In 1973, murderers killed 19,500 Americans. Traffic accidents killed 55,800.

"Criminals inflicted about 500,000 injuries on Americans. Traffic accidents caused 2,000,000 injuries.

The direct cost of "serious crimes" is estimated at about $5 billion a year. Traffic accident costs exceed $20 billion annually.

If you think these comparisons are just statistical manipulations, ask yourself: During the past five years, what have been the direct costs for your crime losses plus the cost of your crime insurance? And what have been the direct costs to you for traffic accidents plus the cost of your automobile accident insurance?

You're an unusual American if your direct personal costs of crime have been the greater.

NEXT MONTH
Driving in Spain

and customs should pay off in less American involvement in traffic mishaps.

GEOGRAPHY AND CLIMATE

A good starting point for our orientation is a brief geographic introduction to the country. The Republic of Korea (ROK) is a relatively small country. It covers an area roughly half the size of New York State. It is bordered on the north by the Democratic Peoples Republic of Korea (North Korea), on the west by the Yellow Sea, on the east by the East Sea (Sea of Japan), and on the south by the Korea Strait. The eastern coastline is rocky and rugged with few navigable harbors, while the western coast is low and characterized by broad mud flats. There are over 3,000 offshore islands, the largest of which is Cheju, located about 45 miles south of the peninsula.

Korea is a mountainous land and, while none of the peaks is very high the ranges are steep and abrupt. This gives an impression of massiveness that has earned the nation the nickname "Switzerland of Asia."

The climate is temperate, and arctic-type winters are rare except in the northern areas. The typical winter in other areas is marked by three days of cold weather followed by about four days of milder weather. Seasonal changes are similar to the midwestern United States, with July and August being the hottest months and the coldes days falling in December and January. The rainy season is from June to August, with about 50% of the total rainfall.

LICENSING/REGISTRATION

Since licensing and registration procedures will vary depending on Service regulations and local command requirements, I will only mention those rules that apply throughout the country. It's a good idea to write your assigned unit for current information and restrictions prior to arranging for shipment of your POV from the States.

Authorized U.S. personnel may obtain a USFK Drivers' Permit free-of-charge by the area command upon completion of required training and

continued

(above)
Korea has over 3,000 off-shore islands. This one is Song-do, off the coast near Inchon. At low tide, it can be reached by a footpath.

(left)
The number of cars on Korean roads has increased dramatically in the past few years.

(above)
In the larger cities such as Seoul and Pusan it is not unusual to see five or six, or even more, busses at an intersection, all headed for the same bus stop.

(right)
Young people and the very old account for the majority of Korea's pedestrian fatalities.

testing. The permit is good for a period of three years. Minimum age, except for Learner's and Student Permits, is 18.

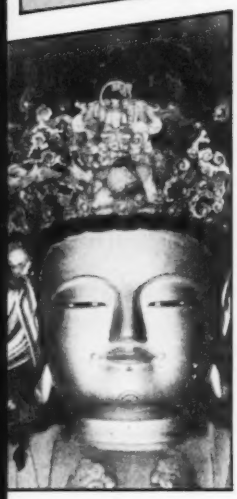
Within a reasonable period after accepting your vehicle at port of entry, usually 10 days, you must take it to the central vehicle recorder in your area and have it registered. To save time, check with your commander beforehand concerning the required documentation.

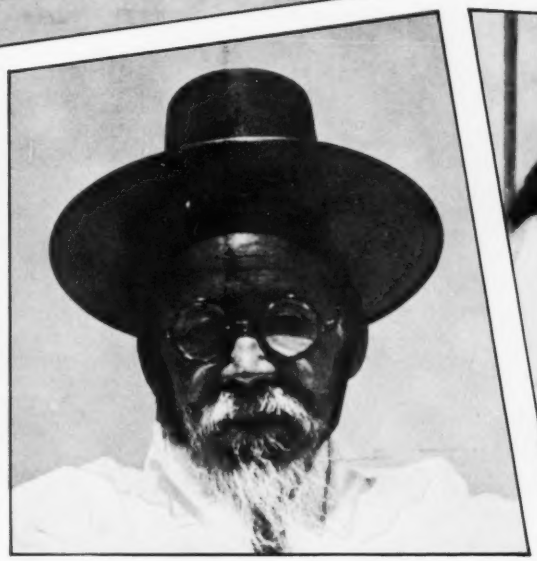
Upon receipt of your USFK plates, you must take the vehicle to a designated representative of the ROK Government to have the official seal (a lead bolt) affixed. Once the seal is affixed and you have received a copy of the registration document, the registration is completed.

The ink is dry on your license and your POV is all registered and now you're ready to try out your wheels. Ease into your new driving experience extra cautiously. Your first trips will probably be on and around your base, so let's take a look at urban driving.

In many ways you'll find driving in Korea similar to driving in any congested area back home, but the differences can trip you up if you are unwary. For the first headache, those 700-plus people in your square mile will all seem to be out walking just when you decide to drive. Because of the relatively recent influx of large numbers of vehicles, most pedestrians and drivers are not quite as "street wise" as you might expect. Although crosswalks are marked, pedestrians have an irritating tendency to cross streets wherever and whenever the mood strikes. And in Korea, even a jaywalker has the right-of-way.

(left)
When passing a bicycle, especially one that is loaded with heavy items, it is advisable to give it lots of room.





There's a better than even chance that a pedestrian, with his mind focused on his destination, will take no notice of you and your car. This is particularly true of the elderly and the very young, who account for the majority of pedestrian fatalities. Children often convert the middle of smaller streets into temporary playgrounds.

It pays to be especially wary of taxi and bus drivers. In their rush to pick up more fares or meet tight schedules, they will break every rule in the book and it's hard to keep your cool. The best advice is to give them plenty of room and don't insist on your right-of-way.

If you own a large luxury car, think twice before bringing it to Korea. Except for expressways and main city thoroughfares, most roads are narrow and poorly paved (if at all), and an increase in the size of your vehicle increases the pucker factor geometrically.

RURAL AREAS

Driving in rural areas poses some particular hazards for the American driver unlike those usually found in the United States. Many roads are unpaved and very dusty for most of the year, obscuring vision. Automobiles and trucks share the road with a variety of vehicles ranging from bicycles and oxcarts to handcarts and old men with loads on A-frames. And of course there is the usual quota of taxis, busses and pedestrians. This hodgepodge of traffic competes for space on roads originally designed for animal and pedestrian traffic, and everyone insists upon the right-of-way.

continued

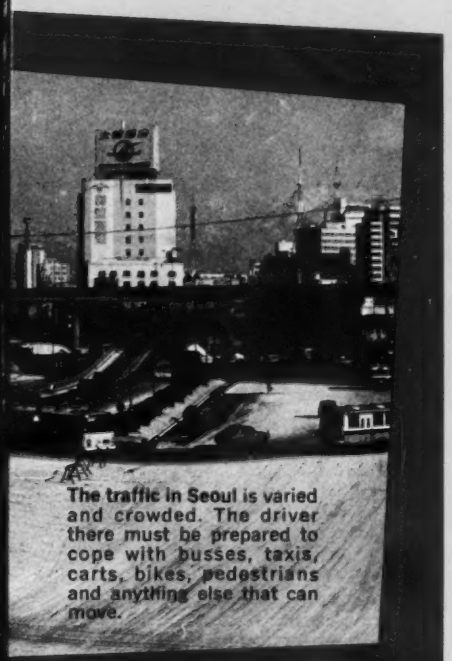
Finding your way on a Korean expressway is relatively easy, since the signs are bilingual.

Busses normally stop on the roadway when picking up and discharging passengers. Although Korean law does not prohibit the passing of a stopped bus, it is not recommended. There is always the danger of striking an unwary pedestrian, and narrow shoulders combined with roadside ditches make swerving to avoid a head-on collision an unattractive alternative.

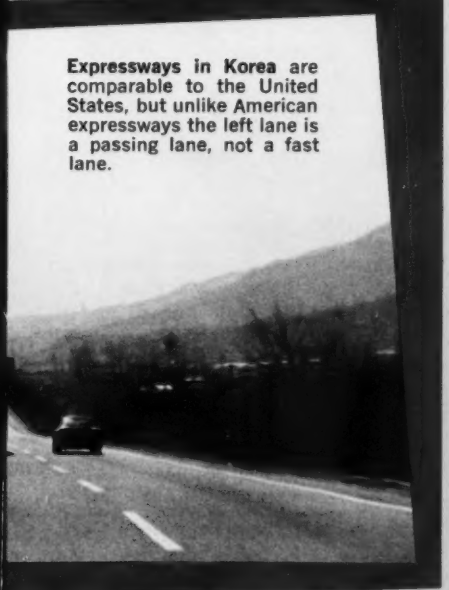
Extra care is required in the countryside because of the variety of traffic encountered.

In many villages, houses are built so close to the roadways that when an occupant exits his dwelling, he is often directly in the path of your vehicle. When kids and a variety of animals are added to all this it's easy to see that driving through a small Korean village takes patience.

In both rural and urban areas, roads are used for work and storage areas. It is not unusual to encounter piles of rock, sand, farm produce or broken-down vehicles. With the many blind curves and sharp turns, the speeding driver quickly finds himself in a pile up.



The traffic in Seoul is varied and crowded. The driver there must be prepared to cope with busses, taxis, carts, bikes, pedestrians and anything else that can move.



Expressways in Korea are comparable to the United States, but unlike American expressways the left lane is a passing lane, not a fast lane.

Although speed limits are posted on most main arteries, USFK drivers are subject to citation by Military Police patrols if they exceed limits established by the command. The limits set by the U.S. command are 20 mph in cities and built areas and 30 mph on rural roads. On turnpikes and toll roads the limits are 60 mph during the day and 50 mph at night. In addition, toll roads and turnpikes have a minimum posted speed, and vehicles traveling below this speed might be cited by the Korean police for impeding traffic. On military installations, the maximum speed is 20 mph unless a lower speed is posted.

Under the US-ROK Status of Forces Agreement (SOFA) U.S. personnel must surrender their driver's license to any competent authority upon demand. Under Korean law, if you are involved in an accident the traffic policeman may confiscate your license pending a hearing. Your traffic ticket will be annotated to reflect this fact, and you may use the ticket as a driver's permit until return of your license.

GASOLINE

U.S. Forces personnel are afforded a substantial saving in the purchase of gasoline. Upon presentation of a gas coupon, which may be obtained at your local ration control facility, you are authorized to purchase gasoline at designated exchange or military stations. The average price is 50¢ per gallon, whereas on the civilian economy the average price is $2.00 per gallon.

EXPRESSWAYS

Most of the major cities in Korea are connected by expressways, and because of the small size of the country, much of it can be seen by car in a relatively short time. The driving time from Seoul to Pusan, for instance, is about six hours. If you get off the main roads, however, you can expect double the driving time. If you plan any extended trips, make sure you top off your gas tank beforehand and know the range of your car. Otherwise, you may be in for that $2 per gallon price to refuel.

Here are a few additional hints to make driving in Korea more pleasant and a lot safer for you.

- Don't waste your time looking for street signs. Only major streets in the larger cities have names, and they are usually poorly marked. To avoid getting lost, get a good map and learn some prominent landmarks.
- Most of the smaller streets and rural roads are poorly lighted (if at all) so use your headlights as soon as the light starts to fail. A pedestrian in dark clothes walking in the street at night is difficult to see even under the best of conditions.
- Military vehicles are not subject to civilian police controls and many ROK military drivers are inexperienced. Exercise extreme caution when you encounter them on the highway.
- Don't hug the curb, especially at night or in fog. That's where most of the bicycles and pedestrians will be.
- On expressways, use the left lane for passing only. Unlike the United States, this is not the fast lane.
- Give bicycles plenty of room. In Korea, these vehicles are used commercially and it's not unusual to see one with a load of over 500 pounds. As you might expect, they frequently tip over.
- Check insurance requirements for adequacy before you ship your car. In addition to the standard types of coverage required in the states, you must have coverage for Korean National drivers who might operate your vehicle (many people hire a driver for about $100 per month and let him get the gray hairs). Be sure that your company affords this type of coverage, and that it is authorized to provide coverage in Korea.

I hope all this has not soured you on driving in Korea. With patience, common sense, and a little extra caution, it can be pleasant. A car provides access to many of the cultural and scenic wonders of the country, making for a more worthwhile tour. It can get you out into the countryside where you will see the real Korea and gather a scrapbook full of pleasant memories. So, buckle up and happy motoring!

How Not To Be Had —On Auto Repairs

Just about all of us have been had on auto repairs at one time or another—or at least we think we've been ripped off. Common auto repair rip-off stories range from shoddy work and high prices to paying for work and parts not needed, and even paying for work not performed.

A friend once dropped off his car for a tuneup and other routine maintenance, and even though he knew the car had never been moved from where he parked it, he came back to find an $80 repair bill.

Well you've probably heard similar auto repair rip-off stories; you may even have had some pretty wild things happen to you and your car. Unfortunately, despite the number of competent, honest mechanics around, there still are plenty of auto repair rip-offs taking place everyday. Not all of these are the result of less-than-honest mechanics, however. Many of the problems are simply due to incompetence or even an honest mistake by the mechanic. Whatever the case, with the cost of auto repairs these days you have to make darn sure you're getting everything you're paying for.

But with a little bit of knowledge and some common sense you should be able to avoid being ripped off on auto repairs. The following tips are generally agreed on by consumer protection agencies, reliable auto mechanics, and auto repair industry representatives to avoid an auto repair rip-off.

KNOW YOUR CAR

One of the best ways to protect yourself on auto repairs is to know generally how a car operates and more specifically how your car works. If you know even a little bit about cars you can save a lot of money by diagnosing and repairing minor problems on your own. A repairman is also more likely to come across straight if he sees that you understand basically what the car's problem is and what's required to fix it. And it's naturally easier to communicate with a repairman if you can talk his language. Of course if you don't know that much about it, you're better off to keep quiet and let the mechanic do the talking.

The best way to learn automotive basics is through an introductory auto mechanics course at the local community college. By taking a course you'll be able to get your hands on the parts and actually do mechanical work so you develop a real nitty-gritty knowledge of cars.

If you can't take a course, get a book on basic auto mechanics at a library. The best way to learn about your car is to get a service manual for your car and leaf through it a couple of times. Naturally, if you're going to be doing your own maintenance a service manual is essential. But even if you don't do anything else, by all means read the owner's manual carefully. The owner's manuals supplied with today's cars have a lot of good information on topics such as basic troubleshooting.

KEEP UP ON REGULAR MAINTENANCE

There are a lot of good reasons to keep your car properly maintained—the most obvious reason is that your car operates better and more economically. But keeping your car in top mechanical shape can also save you from a variety of rip-offs. For instance, if you have your car regularly serviced and inspected by your mechanic (or do it yourself) you

continued

U.S. AIR FORCE

won't be as likely to fall for the service "specials" that many shops offer.

Sometimes the main purpose of these specials, such as a 32-point inspection or "front shocks and alignment," is to get you into the shop so the mechanic can find other things wrong with your car. You might go in for shocks only and end up with new ball joints and tie rod ends and a bill about three times higher than you were expecting.

Now some of these "specials" offered by reputable shops are perfectly legitimate. But you can still bet they're going to be looking for additional items to repair because they don't make any money on the special alone. Just stop and think, how many times have you gone in for a "special" and driven away with only the parts or service advertised? If you really needed the additional work, and if it was performed properly, that's not so bad. But frequently the work is not really necessary.

Take ball joints on an older car for instance. The ball joints may have been a little worn, but the car may very well be in a junkyard before the old parts would have worn out, let alone the new ones. If you had been going to your mechanic or a diagnostic center regularly they would have told you whether or not you *really* needed ball joints.

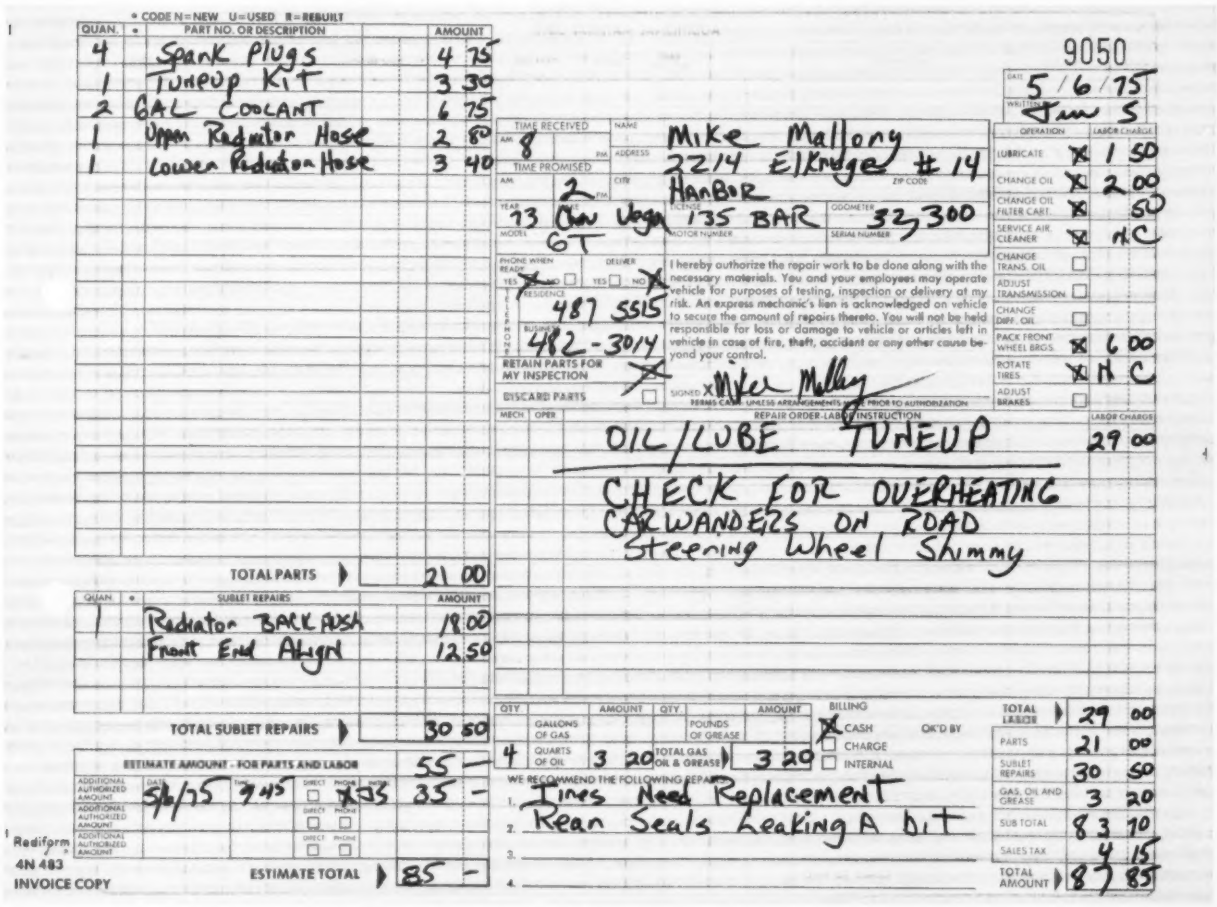
Another advantage to keeping your car maintained is that you can avoid breakdowns in out-of-the-way places where you're at the mercy of unknown gas stations or repair shops. And if you've ever had to have a car towed you know what a rip towing is. It can cost you the value of your car just to get it towed in if you break down in the boonies.

One of the latest rip-offs is that the tow truck operator has you sign a form (often times without your realizing what is is) that says he or his designee must do the repair work. Check this out before signing anything that has to do with towing.

If you're not a member of one of the many motor clubs, it's not a bad idea to join—especially if you do a lot of traveling. It's worth the minimum membership fee to know you won't have to foot the entire bill for a long tow and that you'll be towed by a reputable, authorized tow truck.

DO YOUR OWN

If you know how, perform regular maintenance and routine repairs, such as oil changes, minor tuneups, battery and tire maintenance, and general inspections, yourself. This way you


* CODE N=NEW U=USED R=REBUILT

QUAN.	*	PART NO. OR DESCRIPTION	AMOUNT
4		Spark Plugs	4 75
1		Tuneup Kit	3 30
2		GAL Coolant	6 75
1		Upper Radiator Hose	2 80
1		Lower Radiator Hose	3 40
		TOTAL PARTS	21 00

QUAN.	*	SUBLET REPAIRS	AMOUNT
1		Radiator BACK FLUSH	18 00
		Front End Align	12 50
		TOTAL SUBLET REPAIRS	30 50

ESTIMATE AMOUNT - FOR PARTS AND LABOR 55 —
ADDITIONAL AUTHORIZED AMOUNT 5/6/75 7 45 35 —
ADDITIONAL AUTHORIZED AMOUNT
ADDITIONAL AUTHORIZED AMOUNT
ESTIMATE TOTAL 85 —

Rediform 4N 483 INVOICE COPY

9050

DATE 5/6/75 WRITER Jim S

TIME RECEIVED AM 8 PM
TIME PROMISED AM 2 PM

NAME Mike Mallory
ADDRESS 2214 Elkridge #14
CITY Harbor
ZIP CODE

YEAR 73 MAKE Chev MODEL Vega GT
LICENSE 135 BAR
ODOMETER 32,300
MOTOR NUMBER
SERIAL NUMBER

PHONE WHEN READY YES X NO
DELIVER YES NO X
RESIDENCE 487 5515
BUSINESS 482-3014

I hereby authorize the repair work to be done along with the necessary materials. You and your employees may operate vehicle for purposes of testing, inspection or delivery at my risk. An express mechanic's lien is acknowledged on vehicle to secure the amount of repairs thereto. You will not be held responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft, accidant or any other cause beyond your control.

RETAIN PARTS FOR MY INSPECTION X
DISCARD PARTS
SIGNED X Mike Mallory
PERMS CAN. UNLESS ARRANGEMENTS MADE PRIOR TO AUTHORIZATION

OPERATION		LABOR CHARGE
LUBRICATE	X	1 50
CHANGE OIL	X	2 00
CHANGE OIL FILTER CART.	X	50
SERVICE AIR CLEANER	X	NC
CHANGE TRANS. OIL		
ADJUST TRANSMISSION		
CHANGE DIFF. OIL		
PACK FRONT WHEEL BRGS.	X	6 00
ROTATE TIRES	X	N C
ADJUST BRAKES		

MECH	OPER	REPAIR ORDER-LABOR INSTRUCTION	LABOR CHARGE
		OIL/LUBE TUNEUP	29 00
		CHECK FOR OVERHEATING	
		CAR WANDERS ON ROAD	
		Steering Wheel Shimmy	

QTY		AMOUNT	QTY		AMOUNT
	GALLONS OF GAS			POUNDS OF GREASE	
4	QUARTS OF OIL	3 20	TOTAL GAS OIL & GREASE		3 20

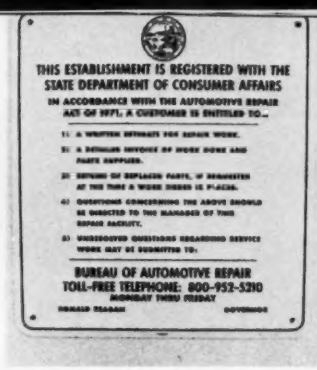
BILLING: X CASH, CHARGE, INTERNAL — O.K.'D BY

WE RECOMMEND THE FOLLOWING REPAIRS:
1. Rings Need Replacement
2. Rear Seals Leaking A bit
3.
4.

TOTAL LABOR	29 00
PARTS	21 00
SUBLET REPAIRS	30 50
GAS, OIL AND GREASE	3 20
SUB TOTAL	83 70
SALES TAX	4 15
TOTAL AMOUNT	87 85

Fig. 1

Work orders should be completely filled out and itemized by part, price, and labor charge. See article for further information.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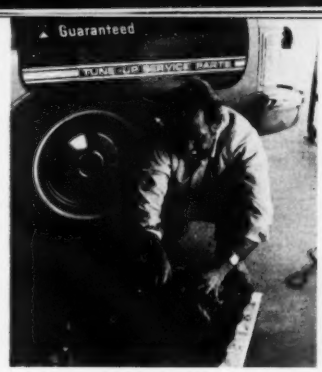

know for a fact that the maintenance was performed, how it was done, and when it was done. Chances are you'll do as good or a better, more thorough job on routine maintenance than a mechanic. Because when you do it, it's your car. When the mechanic does it, it's just a car and he's got a dozen more to get done that day.

This is where a junior college course can save you a bundle. By the time you finish a basic automotive course you can handle just about any routine maintenance or repair you're likely to encounter. And when you buy the parts at discount prices and do the work yourself you really bag up a lot of money over a year's time.

KEEP A LOG

Whether you do your own maintenance or have it performed at a shop, keep an accurate log of when all maintenance was performed—by date and mileage. A log will help you keep routine maintenance on schedule. And if you have things logged, you'll have a good idea of whether a big repair or breakdown was expected or whether it may have been the result of faulty maintenance. Also, with guaranteed parts and service, record the date with the guarantee or work order so you know exactly where the documents are in case of a warranty problem.

FIND A GOOD MECHANIC

Even if you do most of your own maintenance, you should have a good mechanic on the line for repairs you can't handle. The best way to locate a reputable mechanic is to ask around from friends and relatives. If you find several people who recommend one guy very highly, he'll probably treat you okay, too. If you're new in town, you can start shopping for a mechanic and check him out at the Better Business Bureau or local consumer affairs bureau. When you find a good prospect, try a few minor jobs to see how things work out. When you locate a good mechanic, try and take work in fairly regularly, at first —even work you could do yourself. This way you develop a bit of rapport with the mechanics and he knows you and your car. He's more likely to help you out in a pinch—like if you need work done right away.

COMMUNICATE WITH THE MECHANIC OR SERVICE MANAGER

A lot of people ask to be ripped off by going into a shop and telling the mechanic what they want done instead of what's wrong with the car. For instance, a guy goes in and says, "I need new brakes." In this case the mechanic will probably give the customer what he asked for—a complete brake job—even though maybe all that was really needed was a brake adjustment.

The best bet would be to go in and describe what's wrong and let the mechanic diagnose it. For instance, go in and say, "The brake pedal is close to the floorboard and it takes a lot of pressure on the pedal to stop the car. What's wrong?"

Don't diagnose a problem—even if you're pretty sure you know what the problem is. Always give the mechanic an accurate description of what the car is doing or not doing and let him take it from there.

If you can find an up-to-date flat rate manual, it's not a bad idea to find out approximately what the repair job should cost. But don't go in and stick the book under the guy's nose and try to make him do it for the price listed. Inflation has hit mechanics like everybody else, and sometimes they can't even get the parts for the prices listed in the book. So just use the book to get a rough idea of the going cost.

On a major repair you're obviously better off to pay a little more and be sure the job is done properly and completely and that top-quality parts are used. Some shops try to keep costs down by using less than the best parts —it may save you a few bucks in the short run, but could cost you plenty in the long run.

When you have an unusual problem, it's best to talk to the mechanic who'll be doing the work. But in most larger shops you're probably going to be talking to the service manager. So give him the car's symptoms and make sure he writes them down on the work order exactly as you describe them. Also, if you've got more than one item that needs attention, it's a good idea to provide a list of all of the problems or symptoms.

Most larger shops now give a written estimate of the work and provide you with a carbon copy before you leave. If you're working with your favorite corner mechanic, have him give you a verbal estimate if he isn't in the habit of giving written estimates. And in either case, make sure that it's agreed that the mechanic will check with you before doing any work not authorized on the work order or agreed upon verbally, or if the final bill will be much higher than the estimate.

You should also ask for bills or work orders to be completely itemized by part name and cost, not by part numbers that don't mean a thing to you. The cost for each part and labor charge for each procedure should be clearly shown so you know exactly what you paid for each. If you don't understand the completed work order, get the mechanic or service manager to explain exactly what was done and why.

continued

Finally, if possible you should test drive the car before paying the bill. If you can't do this, check the car very carefully on the way home. If the car has not been fixed to your satisfaction, go immediately back to the shop and politely tell the mechanic or service manager what you think is wrong.

A lot of people blow it by getting mad and yelling and threatening before the shop has even had a chance to see what's wrong. Mechanics are human like the rest of us and make mistakes. Give the shop a fair chance to take care of the problem before you get all hot about it. But don't take any jive. Mechanics have the ultimate cop-out these days—or so they think. You hear, "Well, it's all that smog stuff, can't do a thing about it," way too much these days. Some mechanics will blame anything and everything on that "smog stuff" if you let them.

So if you don't feel the work was properly accomplished and the shop is not giving you any satisfaction, then your recourse is the local Better Business Bureau, local consumer affairs office, or in the case of a new car dealer, the regional service or customer relations representative. The dealer is required to give you the address of the regional representative.

MARK PARTS

When you're taking your car in for repairs, it's not a bad idea to mark commonly replaced or serviced parts with a felt marker or by scratching painted parts. This is especially true of a shop you're not familiar with or if you're having work done out on the road. Ask to see the old parts anytime new parts are installed. If you check for the mark you put on the old part, you'll know whether or not you really got a new part. Some less-than-reputable shops purposely keep old parts lying around; if you're not careful they may be showing you somebody else's old part and you're paying for a new one you're not getting.

CHECK ELSEWHERE

If you think you're about to be ripped off or have been ripped off, don't hesitate to check with a second mechanic for another opinion. This is where a diagnostic center can come in handy. Diagnostic centers are a good place to go anytime you're uncertain about your car's condition. For $10 or $15 they usually produce a pretty accurate analysis of your car.

SPECIALISTS

Specialty shops now have repair work in a specialized area such as automatic transmissions and electrical and radiator work pretty well wrapped up. And in most cases these shops are better equipped to handle the work than the average mechanic. So they can probably do a better job in less time for the same price or even less. But before running off to a specialty shop with a job, check with your regular mechanic. He may be able to handle the problem. And if he can't, he may be able to farm out the job for you and save you some bucks. If he can't send the job out for you, find out who he recommends to do the job.

REBUILDS

In many cases you can reduce maintenance costs by replacing worn out parts with rebuilt parts. Whenever you need any parts replaced, ask your mechanic what he thinks about a rebuild. He may not suggest it originally, but if you bring it up he may agree that it would be a good idea. Generally, rebuilt parts such as alternators, starters, and water pumps are about as good as new ones.

On some parts such as fuel pumps, the slim difference in price doesn't warrant a rebuild when you can get a new one for about the same price. You'll have to rely on your mechanic to advise you on what rebuilt parts are a good deal. Also try to get factory rebuilt parts—factory rebuilds are usually a better bet than having a mechanic rebuild your old part.

DEPARTMENT STORES

Anytime you need repairs and you're not sure where to go, try the auto service center at one of the department stores. Department store service centers are very convenient and generally offer high-quality work at competitive prices. And the mechanics at these service centers generally work on straight salary with no commission. So they're more likely to take their time and do the job right and less likely to try and hawk you for parts you don't need since they won't get a commission out of every new part they stick on your car.

Another advantage is that department stores offer guarantees that are good almost anywhere in the country —at least anywhere you can find a store. These stores also feature many parts with very long or lifetime guarantees. They'll generally honor these guarantees without a bit of hassle.

MOTORISTS' MOST COMMONLY ASKED QUESTIONS

What are the five questions most commonly asked by motorists seeking information about their vehicles?

The Southern California Auto Club receives thousands of queries monthly, which it considers typical of driver interest nationwide. The top five and their replies are:

No. 1—"How can I be certain that I am purchasing the correct child care seat or safety harness for my child?"

Answer—Child care seats have a label which states, "Meets or exceeds Federal Motor Vehicle Safety Standard 209." The child safety harness has a label that states, "Meets or exceeds Federal Motor Vehicle Safety Standard 213-A."

No. 2—"Can I have my vehicle inspected for a possible safety defect?"

Answer (Edited by DRIVER)—Some auto clubs in larger cities have trained technicians who, upon appointment, can inspect a vehicle for possible safety defect. Most diagnostic car care centers also are equipped for such inspections; otherwise, take your vehicle to a reputable new car dealer servicing the same make.

No. 3—"What is the least amount of tread that a tire can have and still be considered safe?"

Answer—The minimum is 1/32 of an inch. Any less than this and the tire is to be considered a safety hazard and should be replaced.

No. 4—"Can I disconnect my ignition interlock system?"

Answer—Yes, it can be disconnected as it has now been banned by Congress. To have this done, take the vehicle to a car dealership for the necessary modifications.

No. 5—"May I use a bumper hitch on my car?"

Answer—Any vehicle of 1973 and earlier can use a bumper hitch. Vehicles of 1974 and 1975 cannot, as they are equipped with recoverable bumper systems, and a bumper hitch on these vehicles would render their recovery capacity inoperative, possibly resulting in bumper or frame damage. 1974/1975 vehicles require a frame-mounted hitch.

by ROGER HULL

RIDE SAGELY

Motorcycles are dangerous . . . as are flower pots, paring knives, matches, platform shoes, bathtubs, paper clips, sunshine and just about anything else you might name including *safety* pins.

Actually nothing is dangerous of itself. It is only when the human element is introduced that a question of possible hazard comes up: It's not the item that is dangerous—it's the manner in which it is used.

Now there are a lot of self-proclaimed (and usually nonriding) "motorcycle experts" who will quote a lot of twisted and incomplete statistics to "prove" just how dangerous riding a motorcycle is. As a biker, the most important thing you can know about such statistics is—how to stay on the right side of them.

The best way to approach motorcycling safety has little to do with long rows of columns or rhetorical declarations of odds. Safety has to do with *preventing* accidents and that has to do with *defensive riding*. If you're not a defensive rider, then you've got no business handling a motorcycle (or any other vehicle, so far as that goes). Careless riding is the quickest way to get stuck on the wrong side of some "expert's" decimal point.

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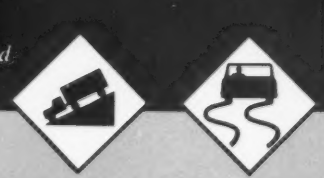
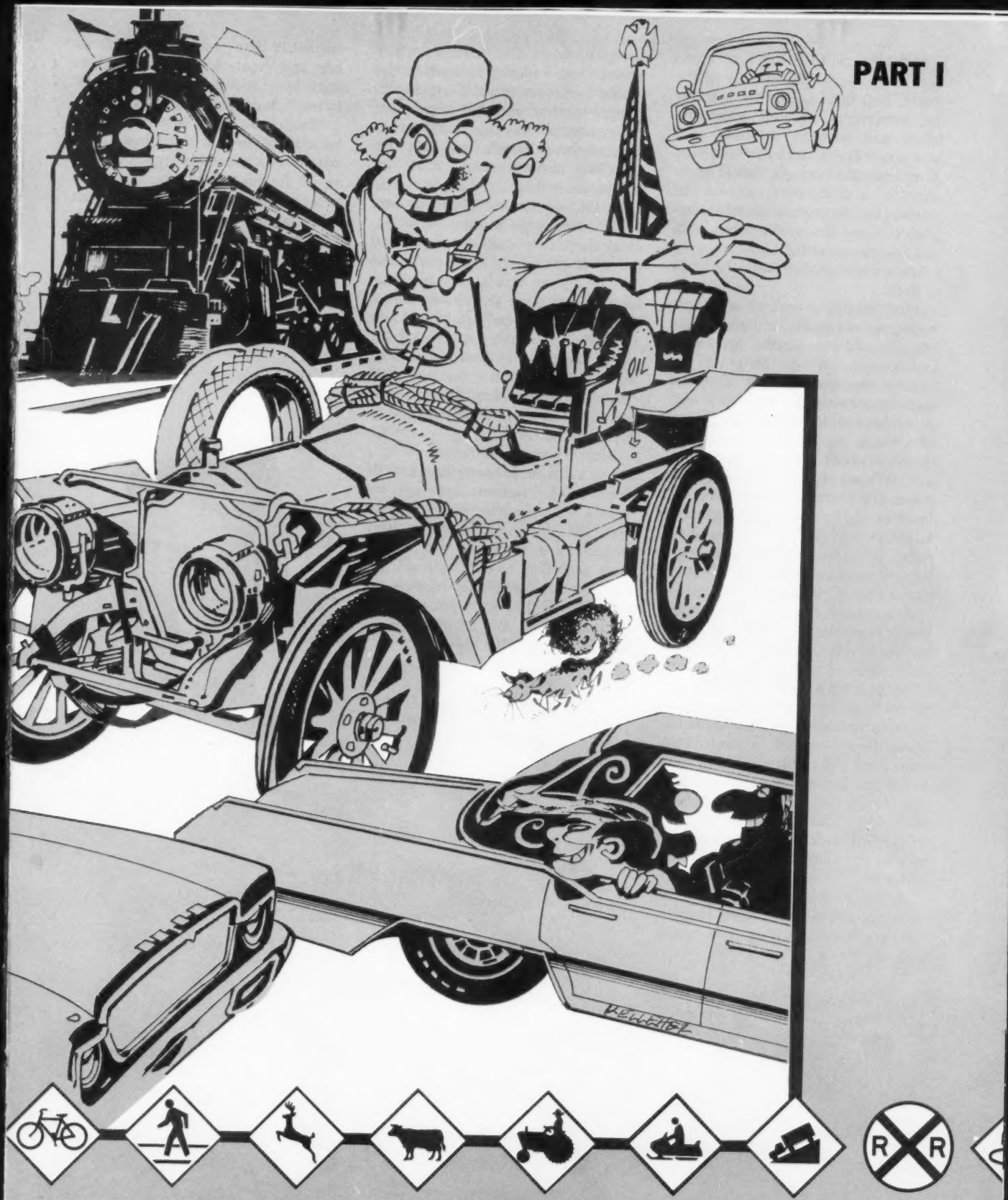


The redoubtable editor of ROAD RIDER Magazine offers his sage advice on street riding


PART I
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Defensive riding is based on attention and anticipation—usually of the worst. You must constantly consider the possibilities in your immediate future and instantly determine just how you will deal with each of them. A motorcyclist not only should know what he is doing every second—he should also be aware of what he's just done and how it will affect what he's going to do next.

Or to put it another way—be ready to duck!

Most cyclists who end up in the wrong set of figures get there for one of two reasons—under-experience and overconfidence. They can be equally disastrous. When a novice biker goes boom, chances are it happened because he had not yet gathered enough experience to cope with the situation in which he found himself. When an old-timer ends up down, it's probably because of some lapse of alertness or a divergence of attention, both of which actually are forms of overconfidence. There are supposedly some honest accidents—but most could be prevented.

Motorcylists are quick to point out that a big majority of all auto/cycle accidents are the fault of the auto driver. Fine. Knowing you have been victimized by an idiot motorist may soothe your ego, but it isn't going to get your cast off any sooner. The obvious thing to do is to try to keep away from the motorist. Help him avoid the consequences of his own stupidity. It should be your responsibility to prevent the accident in spite of the large lack of cooperation you'll receive from most motorists in this endeavor.

A lot of defensive riding consists of things you should already know—the dull, basic safety suggestions and lowly rules of the road to which you've been exposed time after time in one form or another. These are the things you tend to ignore in moments of impatience or anxiety or anger—those moments which come only seconds prior to the accident.

The most basic of these are plain old traffic regulations. They may vary slightly from state to state but essentially they're the same for cycles and autos. If you've not gone over them recently, your state's motor vehicle departments have handbooks which list and explain them. It's a good idea to have a recent copy around the house. Try reading them occasionally and see if you can find just one regulation there that doesn't involve some form of that overlooked commodity, common courtesy.

Most states now require that a motorcyclist be properly licensed. Be sure you've complied. Approach the written examinations with the idea that the questions probably were written by a noncyclist and answer them according to that type of logic. . . . you're more likely to pass the first time. Riding tests are supposed to indicate if you are capable of handling a cycle or not. While they are better than nothing, most are inadequate. Some bikers who can take top trophy in a field meet consistently aren't fit company on the road.

The touring biker is usually riding on one of four basic categories of roads—on superhighways, country roads, residential area streets or business/industrial area streets. There are overlaps, of course, and each has its own special quirks—but basically defensive riding remains the same on all.

Whether in rush-hour city traffic or on the wide open stretches of the interstate, the alert biker will maintain a flow-of-traffic pace. Don't

dawdle on the freeway and don't race through city congestion. Keep your distance . . . don't tailgate and don't permit others to tailgate you. Chances are you can stop your bike in a shorter space than that steel tub behind you . . . but should an occasion arise where you have to demonstrate this to that tailgating driver, he's going to miss the last part because you'll finish the demonstration staring up at an eight-cylinder crankcase.

Keep checking your rear view mirrors (note the use of the plural—you're better off with a pair of them). Know what is behind you and how close it is. Ride accordingly. Tapping your brake pedal to flicker your stop lights often will discourage a tailgater. If that doesn't work, motion him back. If that too fails, pull over and let him go ride the bumper of something his size.

That old rule of approximately one car length distance for each 10 miles per hour of speed still works if you know how long a car length is. An easier method is to select a fixed object or mark ahead and count "one-thousand one, one-thousand two," starting when the vehicle ahead passes that object. If you pass the object before completing the count, you're following too closely. It works at any speed.

If you're too close and traffic suddenly halts, you just may find yourself doing your Evel Knievel imitation —sans your bike. On the other hand, if you lag too far behind, you're going to find somebody cutting in, probably in a way calculated to spoil your kind disposition.

Always be aware of what is happening up the road. Be concerned with those several cars ahead of the one you're behind. If you get lodged behind a truck or camper or some other vehicle which prevents you from seeing the road ahead, change your circumstances. Don't let yourself be dependent upon the brake lights of the vehicle directly in front of you. Otherwise you may find yourself guilty of trespassing into somebody's back seat.

A rider should position himself to the left side of the lane—approximately where the left wheels of an automobile will track. Many drivers don't understand why this is done and consider it just another example of the blatant stupidity of all motorcyclists. Not only does this practice enable the cyclist to avoid those oil drippings in the center of the lane, it also helps avoid other debris which is most apt to be there, shunted aside by the passing of automobile wheels.

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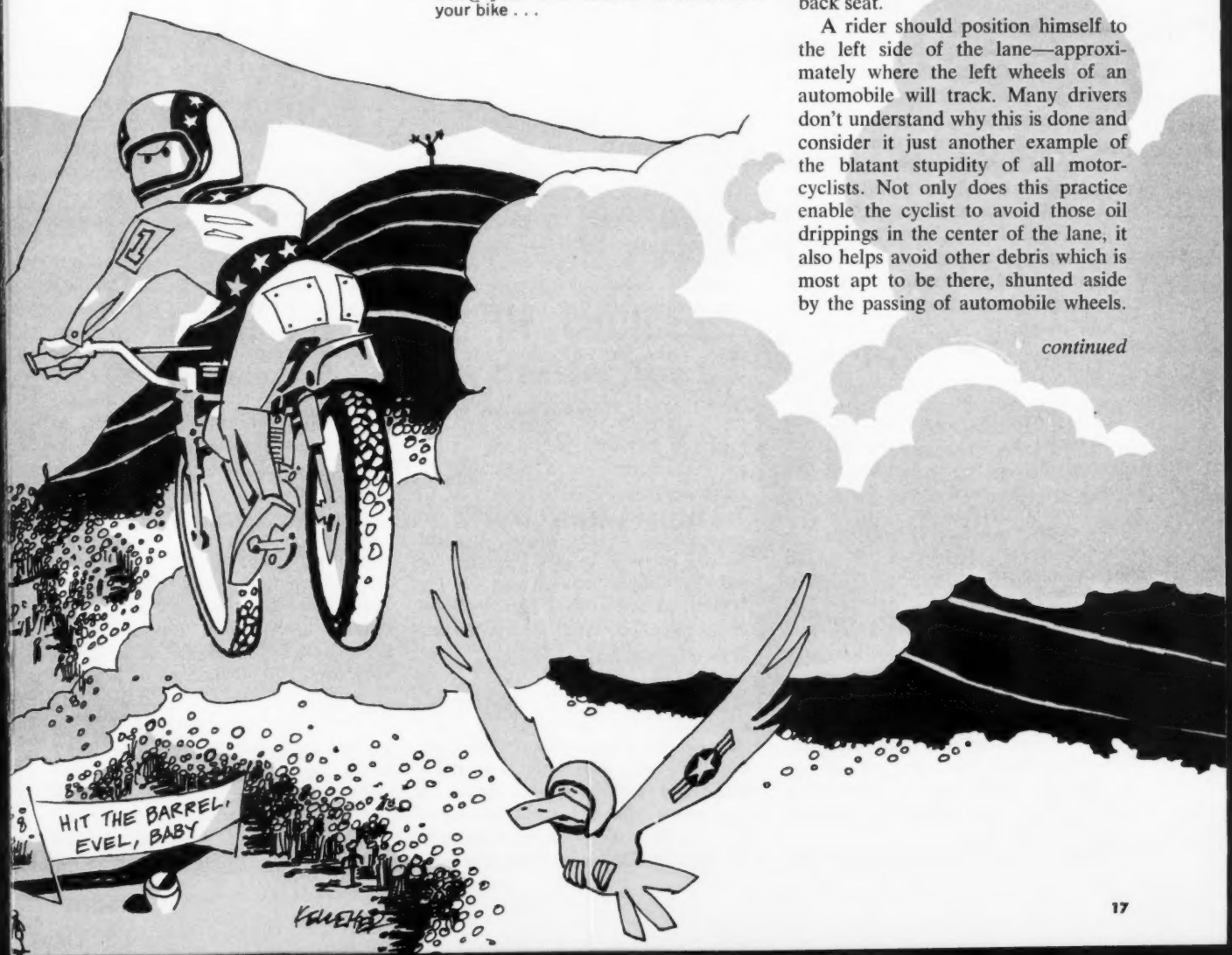
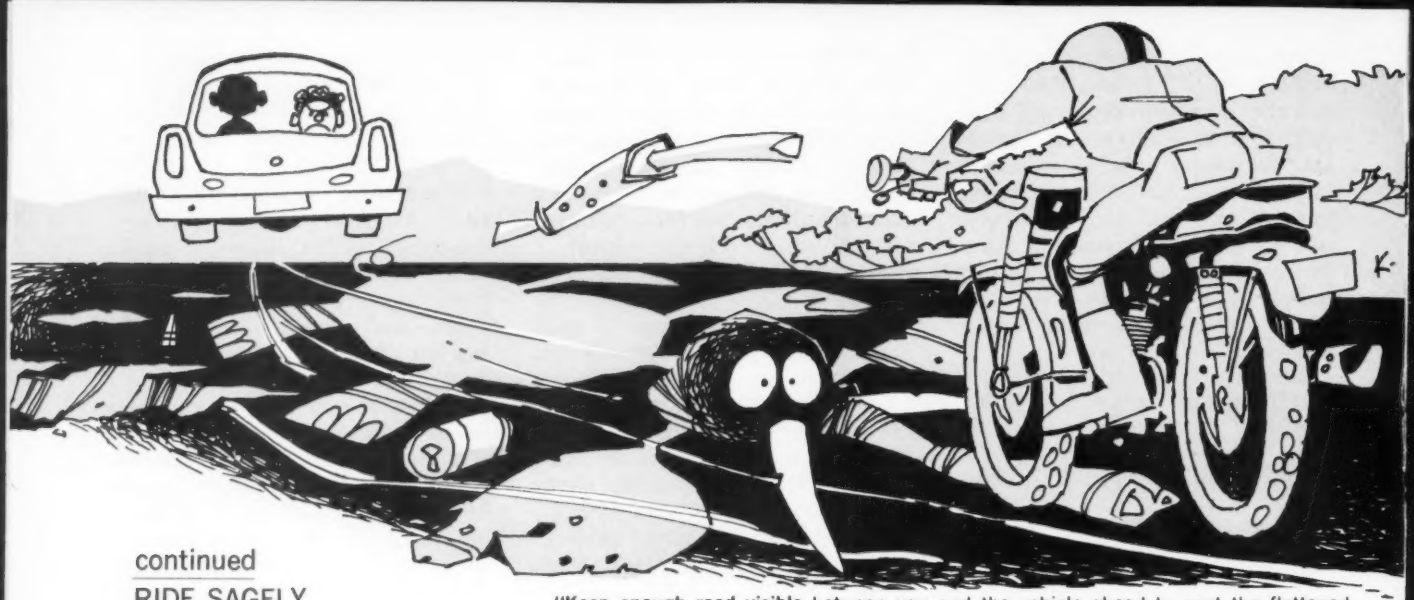
"If you follow too close and traffic suddenly halts, you just may find yourself doing your Evel Knievel imitation-sans your bike . . .





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RIDE SAGELY

"Keep enough road visible between you and the vehicle ahead to spot the flattened wildlife, etc. . ."

Most important, his position places the cyclist's reflection in both the inside and left outside rearview mirror of the car ahead; he's less apt to be in a "blind spot." Still another advantage is that any vehicle wishing to pass you must switch lanes to do it—which decreases (but doesn't eliminate) the chance there will be an attempt made to run you off the road.

A cyclist coming up behind another cyclist sometimes is tempted to pass him on the right. If you do, make absolutely certain that the other-biker knows what you're up to. A good biker should be aware you're there and frequently he will pull over to permit you to pass within the lane . . . but don't assume. Some bikers, unfortunately, are all over that lane and it is physically impossible for both machines to occupy the same space simultaneously . . . at least in this world.

If you're riding the extreme left lane on a freeway in moderate to heavy traffic, you're smart to switch to the right-hand side of that lane . . . for the same reason—to avoid being crowded into the divider (seldom a comfortable occurrence). Keep in mind, too, that an automobile driver, faced with a choice between denting his fender on another car or on a little old motorcyclist, usually will select the biker. If you see a close call coming up for a motorist, expect him to be willing to sacrifice you on his mobile altar of chrome.

When you change lanes, do it only after signaling your intentions and checking to be sure there is an open space which will accommodate you. Don't depend entirely on those mirrors—take a quick look before you maneuver . . . always.

Never ride beyond what you can see. On those back country roads don't assume that all things remain constant beyond the crest of the hill or that blind corner. There just might be a detour or slow-moving tractor or a patch of oil waiting there to confound you. Regulate your speed accordingly. Slow down before you go into a curve and then do your accelerating as you come out of it. Anytime you're not sure, slow down. If some of your racier friends jeer at such precautions, let 'em. If you ride just to impress your cycling buddies, then you may well end up impressing an embankment or a billboard instead.

Be constantly aware of what the road surface is like ahead. In light traffic, be sure to keep enough of the road visible between you and the vehicle ahead so you can spot the chuckholes, oil, sand, mud, old mufflers, flattened wildlife, etc., far enough in advance to make your evasive maneuvers with due consideration.

Some bikers get into trouble on familiar roads. Riding the same route frequently dulls your alertness. You may know what is beyond that curve and just how sharp the bend is at the far end of the bridge and how fast you can take the dips—but any of these "familiar" conditions are subject to instant alteration. Don't let familiarity breed contentment!

When you pass on a two-lane road, be sure you are clear to do it leisurely. It's a mite distressing to dash into a quick pass just as the bike goes on reserve. After you complete your pass, be certain you are now far enough ahead of that vehicle before you pull back into that lane. You'd be surprised (well, maybe you wouldn't) how frequently a driver will speed up when he realizes he's being passed by a motorcycle.

Unless there is a semi or a Greyhound immediately behind you, be leery when you encounter a long line of oncoming traffic on a two-lane road. You can expect some guy to suddenly pull out of that line to pass —or to check to see if it's clear for him to pass.

Now is a good time to make a temporary exception to that rule about riding the left side of the lane. If you veer to the right temporarily, it will make it easier for that third or fourth driver down the on-coming lane to see you sooner as he noses out from behind the van. If he stays out there too long, he's considering a dash for it (and probably figuring you're farther away or going slower than you are). Try blinking your headlight at him . . . but be prepared to take to the shoulder.

Rog concludes his well-seasoned words on street riding next month.

SEE and BE SEEN DRIVING

" I HAVE TWO SETS OF CHOICES:

To Perceive, Recognize, Decide, React, and Evade an Accident

AND/OR

Make Myself Seen, Identified, and Avoided"

Traffic is light to medium, and you're cruising down the highway in your car at the legal speed limit of 55 mph. Suddenly, you glimpse "something" starting to cross the road from a tree-hidden lane about 165 feet ahead on your right.

—You have just a fraction over two seconds to (1) PERCEIVE the danger, (2) RECOGNIZE what it is, (3) DECIDE what to do about it, (4) REACT physically, and (5) EVADE an accident.

OR, you are that "something" making an unsafe entry onto the highway. You may be walking, riding a motorcycle, or driving a Bug.

—You have slightly more than two seconds to hope that you will (1) BE SEEN, (2) BE IDENTIFIED, and (3) BE AVOIDED by the oncoming car and also do what you can to get out of its way.

Sound impossible? Not at all. You can find yourself in either position (not simultaneously, of course), and what you will do—or should already have done—depends entirely on how seriously you take your driving. This, then, is a story applicable to every vehicle driver or would-be driver (and pedestrian) on the road today.

With few exceptions, every traffic accident can be prevented if you or the other driver involved is alerted in time to take preventive action. This is especially true if the other vehicle or moving object is sufficiently illuminated and marked for you to see it easily or, conversely, if the other driver can easily spot you.

PILOTS PIONEERED CONCEPT

Aircraft pilots for years have called this capability, "See and Be Seen Flying," so why not "See and Be Seen Driving" for us groundlings?

The first half of the title of this article refers to the physiological limitations imposed on our ability to SEE. What

continued

EXTRA EYES—Your vehicle's headlights actually supplement your own ability to see at night, so it's important to keep them free of dust and road grime to obtain maximum visibility. It takes only a few seconds to wipe them clean at each gas stop.

HOW BIG IS YOUR NOSE?—Everyone has a built-in defect or blind spot within the field of vision of each eye 45 degrees from center, and it increases in significance with the size of your nose. Its effect is minor at close range but at 300 feet if a door post blocked the vision of one eye, you could fail to see a semi-trailer truck due to your nose and the blank spot in your other eye.

continued

SEE AND BE SEEN DRIVING

some of the experts have to say on this subject is covered this month in Part One.* Next month, in Part Two, we will explore what you can do to BE SEEN by the driver in Part One.

More than four out of every five automobile accidents (83.2%) are caused by human factors—mostly driver errors—according to a recent University of Indiana study.

FOUR LEADING ACCIDENT FACTORS

The four leading factors in accidents are (1) improper lookout, particularly at intersections; (2) excessive speed; (3) inattention; and (4) improper evasive action.

Researchers found that human weaknesses and carelessness in turn are the root causes for these kinds of accidents. To correct this situation, people's basic behavior and attitudes must be changed—a relatively difficult but not impossible task.

*See list of sources at end of article.

Although drinking is involved in more than 50% of America's traffic accidents, alcohol will not be discussed in this article (see "One Too Many for the Road," April 1975 DRIVER). But the fact remains, more than 80% of all driving mishaps are still caused by human factors.

ARE WE REALLY GUILTY?

OK, shall we all hang down our heads and cry? No siree! Not according to one prominent Air Force research psychologist.

He says we're not necessarily guilty of either (1) negligence or (2) a willful violation when we cream someone with our wheels. It's just that now and then we suddenly find ourselves in a traffic situation we can't cope with.

The inescapable conclusion, he goes on, is that if human error accidents are to be cut back, man's "inherent design limitations" (the body and mind most of us have been stuck with since birth) must be considered. Automobile manufacturers, for example, must carefully consider the best location in every new car for such simple items as the dashboard cigarette lighter, heater and air conditioning controls, the headlights switch, and the speedometer.

When the man-machine, time-distance relationship breaks down somewhere, our psychologist friend adds, you generally wind up with one or more movable objects being re-moved, often disastrously.

COLLISION CAN RUIN YOUR DAY

There's a tired old saying among pilots that a midair collision can ruin your whole day. It's just as tired but no less true for we Earthbound members of gasoline alley. An auto collision may not be as spectacular, but it, too, can sure ruin your day!

With highways becoming more crowded each year, your exposure to the collision hazard naturally tends to rise. How then can you counteract this trend?

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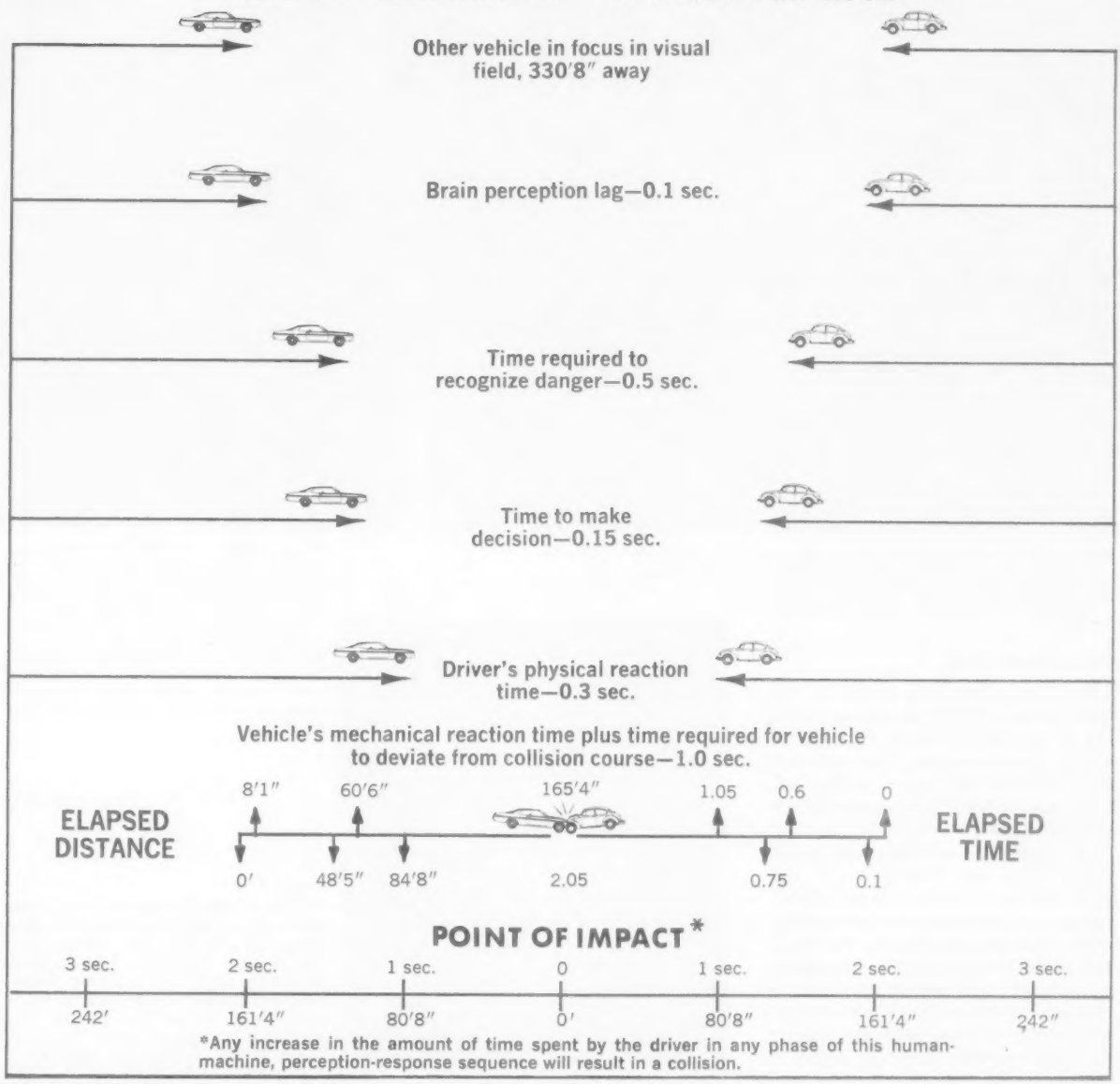
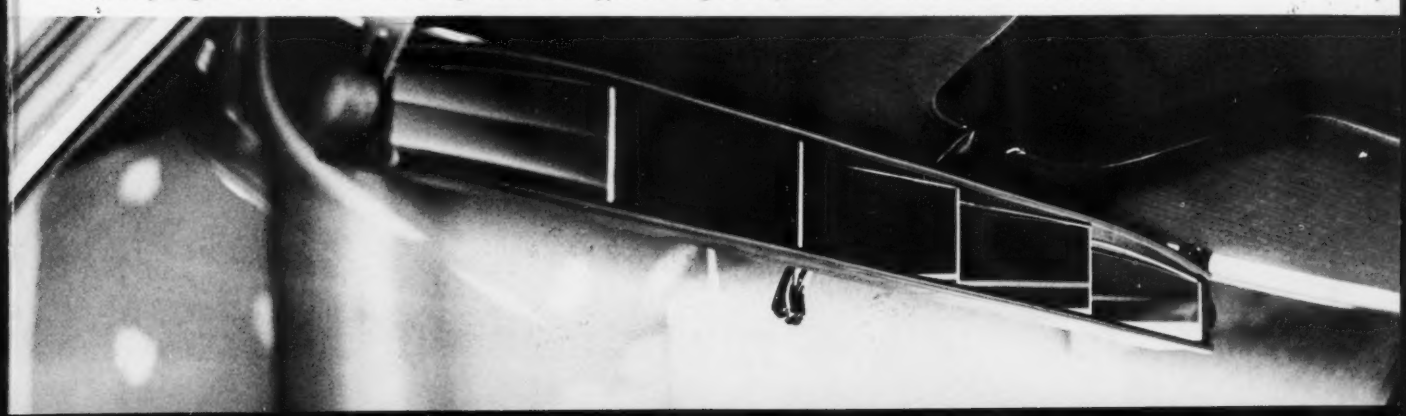
HEAD-ON COLLISION AT 110 MILES PER HOUR



COLLISION COURSE—This chart illustrates the estimated human-machine, time-distance relationships of two autos traveling on a head-on collision course at 55 mph or at a combined closing speed of 110 mph. An elapsed time of 2.05 seconds is the bare minimum available—under perfect conditions for both men and machines—for either driver to avoid a collision, even though each is more than the distance of a football field from the other.

PANORAMIC VIEW—This panoramic type rear view mirror is a real blind-spot beater. The arrangement of a group of separate, carefully angled mirrors has an advantage over other types of single-unit panoramic mirrors—distortion is minimized.



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SEE AND BE SEEN DRIVING

Visual collision-avoidance depends almost entirely on human performance. Research shows it is made up of five distinct steps: (1) Perception, (2) recognition or evaluation, (3) decision, (4) reaction, and (5) evasion.

None occurs instantaneously; each takes time, and these times add up before you know it. Thus, a certain amount of time is always required for you to see and avoid another vehicle, pedestrian, or obstacle. The higher your closing speed, or the lower your effective visibility, the less time you have to complete these five steps and to avert an accident.

SPEED TAKES TIME

As a physical-sensory structure, the human being operates according to the laws of mechanics. He is a system of weights, counterweights, balances, and levers. He can only reach so far and lift so much, but other limitations are not so obvious.

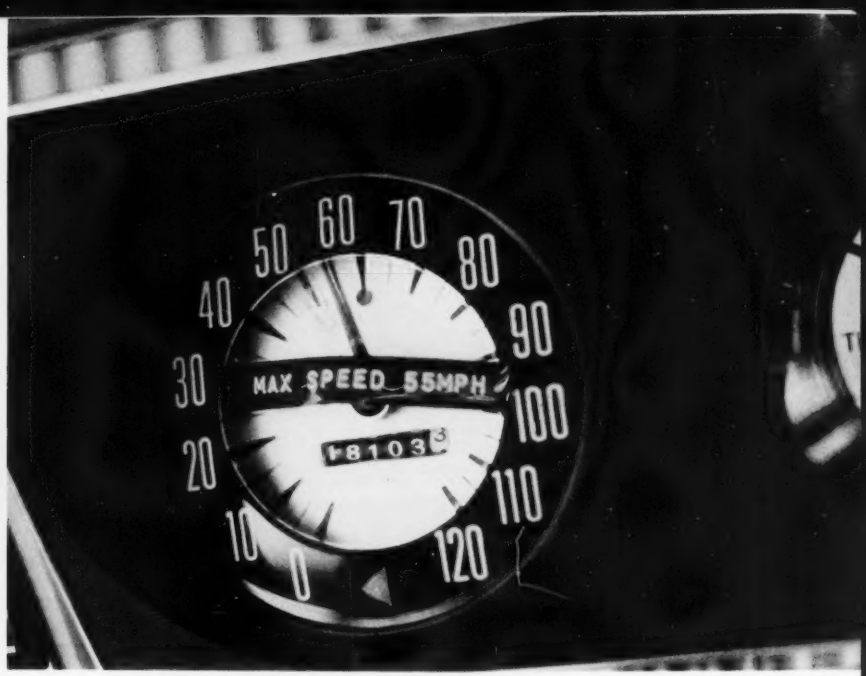
For example, the mechanical transmission of a light stimulus from the eye to the brain and its almost instant response is a complex, time-consuming process. It takes only 30 milliseconds to three-tenths of a second but considered in terms of time and distance in a hazardous traffic situation, this "blink of the eye" becomes extremely important. Speed still takes time.

GLARE FIGHTER—Some cars are not equipped with rear view mirrors which have anti-glare glass for night driving. But what is worse is the driver who has an anti-glare mirror and doesn't flick it on at night (as above). A bright light reflecting from a rear view mirror is just as blinding to a driver as if it were beaming through the windshield from the same distance.

IT'S YOUR CHOICE—Choosing sunglasses is an important matter because of the wide variety of lenses, many of them completely ineffective or actually harmful to your eyes, being pushed on today's fashion-conscious buyers. Frames and lenses of professional optical quality should take priority over your looks and the price, if you value your eyes and want to keep them in top condition for driving.

(left)
WET & STIMULATING—There's nothing like a good sloshing of the face with cool water to refresh and awaken you. If you're on a trip, auto clubs suggest you allocate about 2½ hours for every 100 miles of driving to handle gas, food, and rest stops, but don't wait that long to stretch your legs and cool the old kisser if you're feeling drowsy or fatigued.

VITAL FUNCTION—There's nothing more annoying as well as dangerous than a worn out wiper blade when it's raining or when your windshield becomes dirty while driving. Proscrastination seems to be the main reason for not maintaining this vital visual aid.



HANDY REMINDER—Some military installations have affixed strips of plastic tape lettered, "MAX SPEED 55 MPH," across the speedometer faces in all of their cars and trucks. The speedometer of this Air Force sedan indicates the driver is heeding the warning.

NO. 1: PERCEIVE

A vehicle traveling at 55 mph is moving down the highway at 80.7 feet per second or nearly 8.1 feet per one-tenth of one second. Since researchers estimate a minimum time lag of one-tenth second for eye-to-brain communication in actual driving emergencies, this means that another vehicle passing across your visual field or speeding toward you is perceived at least 8.1 feet behind where it is actually located physically. Such perceptual lag is believed to account for numerous accidents, particularly in high-speed driving.

Another example of the importance of perceptual lag is found in the frustrated duck hunter who fails to lead his target sufficiently and therefore shoots behind it.

NO. 2: RECOGNIZE

When the nerve impulse is first transmitted to the brain, the driver only knows that something is in his visual field. Recognition or evaluation requires still more time—a half-second. Does he see a car, truck, motorcycle, pedestrian, or a cow?

NO. 3: DECIDE

The next phase—decision making—is the most critical, time-wise. It varies from a bare minimum of .15 second to .85 second under ideal conditions, on up to several seconds depending on the task involved.

Decision time is determined by the experience level of the driver, according to a professor at the University of Southern California Safety Center. The less experienced he is, the longer the time required for him to decide. In fact, he may not even make a decision —he may freeze.

NO. 4: REACT

Following his decision, the driver then has a minimum of .3 second to physically react. Again, it could take precious additional seconds.

The muscular reflexes of younger drivers are extremely quick under most conditions, but some guys and gals in their teens or twenties haven't necessarily faced enough hairy accident situations to have established an automatic habit pattern for a quick response. And such a delay could be fatal.

NO. 5: EVADE

The final sequence in the human-machine, time-distance countdown is the time needed for the driver's vehicle to mechanically respond to his inputs to the controls, and then to successfully change from its collision course. The estimated minimum time for these two responses is one second.

Cyclists may want to dispute this vehicle response time because it takes less time for a much smaller two-wheeler to displace its own volume than it does for a car of any size. However, other mechanical reaction factors such as braking and gearing down can easily use up one second or more.

The actual distance for braking the average car to a stop on dry pavement at 55 mph is 167 feet.

TWO-PLUS SECONDS: AN ETERNITY?

OK, there you have it. Two and five-hundredths seconds—the minimum combined time physiologically and mechanically for you and your vehicle to react successfully to a traffic hazard. Chances

continued

(left)
CLEAR VIEW—Does your rear window provide a clear, unobstructed view of traffic behind you like this one does? If not, the glass is probably dirty and/or the ledge is cluttered. You need every visual advantage possible in today's traffic. How often do you clean the windows INSIDE your car? Clean windows also reduce glare and eye strain.

LOTS OF CLASS & GLASS—The fewer the obstructions designed into a car, the easier it is to see what's around you while driving—a very important safety factor whether you're backing out of the garage or preparing to pass another vehicle on the freeway. This recently introduced 1975, wide, small model offers optimum visibility with its expansive window area and low belt line.

are, the human factors specialists say, you'll need more time. Chances also are, the traffic safety pros counter, you won't get it.

It can therefore be concluded that (1) the human demands of "See and Be Seen Driving" may exceed your abilities; (2) collisions will continue to be a constant threat; and (3) the only way you're going to do something about either problem is to recognize your own limitations and those of your vehicle.

EITHER WAY, YOU WIN!

Other than a mechanically sound vehicle, the keys to perceiving, recognizing, deciding, reacting, and evading an accident are your senses, especially your eyes . . . and all techniques and aids available to assist you in SEEing. Then come your hearing and—to some extent—your senses of smell and touch.

Unless you're driving in the smog or a bug suddenly smacks you in the eye, most folks seldom stop to think how important their orbs really are.

After you've digested this article, be sure to read our sister piece on 29 ways to help your eyes do the driving, or how you can SEE more effectively. And then next month in Part Two, we'll tell you what you can do to BE SEEN by the other driver.

Either way, if you SEE the other driver first or you get him to SEE you first—you win!

Professional Sources of Information and Data Used by the Author to Prepare This Article: Anchard F. Zeller, Ph.D., USAF Inspection & Safety Center; Col. Victor J. Ferrari, M.D., USAF O.; Harry H. Hurt, Ph.D., University of Southern California Safety Center; Tirey K. Vickers, Decca Navigator Systems, Inc.; National Highway Transportation and Safety Administration, U.S. Department of Transportation; National Safety Council; University of Indiana; and Systems Technology, Inc.

HOW TO IMPROVE YOUR VISION
Or
29 Ways to Help Your Eyes Do the Driving

1. Wear corrective eye glasses or contact lenses if needed. Even drivers with normal daylight 20/20 vision may have defective night vision. If you find yourself squinting or straining to read road signs at night, your depth perception may be off; therefore, have your eyes examined to determine the possible need for corrective lenses and adjust your night driving accordingly.

2. Wear good quality sun glasses in all conditions of daytime brightness. Without them to protect your eyes from harsh daylight, ensuing night vision can suffer as much as 50%, and it may be a full week before your normal night vision returns. Looking directly at the sun, for example, can result in eye damage, perhaps even permanent damage.

Cyclists are advised that military safety directives are being amended to prohibit the wearing of the new "photo gray" lenses at any time unless they meet federal standards for impact-resistance (the same rule applies for face shields and cycle windshields). Prohibited for military cyclists and not recommended for autoist are "photo sun" or similar type glasses which do not permit even the same degree of light transmis-

sion as the "photo gray" lenses.

3. Do not wear dark or tinted glasses for night driving. Although legally permissible for use after dark, even by cyclists, "photo gray" glasses are not recommended for night driving of any kind (absolutely forbidden for military pilots while flying).

4. Clean your glasses and motorcycle helmet shield frequently. Dirty lenses or shield can restrict your vision 25% or more, cause eye strain, fatigue, and headaches.

5. Don't start to drive, day or night, until your eyes have adapted sufficiently to prevailing light conditions (don't walk out of a brightly lighted room after dark, for example, jump in your car and immediately take off—wait a few minutes if necessary).

6. Keep all windows of your car or other vehicle as clean as possible at all times, both inside and out, especially the windshield and rear window. Tobacco smoke causes an invisible film on inside windows and should be cleaned regularly.

7. Clean the headlights of your car every time you buy gasoline. Dusty lamps can reduce the effective reach of the light beams 50 to 100 feet or more. And keep their aim properly adjusted to get maximum road illumination—brights or dims.

8. Flick and dim your headlights in plenty of time and distance (as much as a mile) and hope the other driver will do likewise. Headlight glare can be your worst enemy at night. If the other driver refuses to dim his lights, DO NOT brighten yours in spite. Remember, one blinded driver is serious enough; two may be fatal.

9. Dim your dash light during night driving to reduce the glare inside your vehicle and to prevent your eyes from constantly reacting to that light.

10. Use fog lights for driving in heavy rain, fog, sleet, snow, dust, or other vision inhibiting conditions. Don't use them for normal night driving. Be sure your headlights also are turned on (legally required in most states).

11. Use a good rear-view mirror inside your car that provides the maximum, undistorted view of traffic to the rear and sides of your car. Faulty or inadequate rear vision results in about six million accidents annually in the U.S. Make sure the mirror has an anti-glare device for night driving and use it for most traffic conditions. Like your glasses, keep it clean.

12. Use at least one rear-view mirror on the outside of your auto, preferably two, and keep it properly angled to reflect a maximum picture of traffic to the rear and side. A mirror that you can adjust from inside your car is best. Utility and recreation vehicles should use large "west coast" type mirrors on both sides. Consider augmenting your present side mirror (if it's large enough) with a panoramic "spot" mirror to increase rearward vision.

13. In buying an enclosed vehicle, consider selecting one that has ample window space for maximum side and rear vision from the driver's seat as well as a good frontal view.

14. Eliminate constant sources of eye glare from your own vehicle by painting or otherwise masking or dulling bright reflective surfaces (like chrome) anywhere within a 180-degree sweep of your frontal vision.

15. Regularly clean all glass faces on your vehicle's instrument panel, especially the speedometer or tachometer and gas gauge, to assure quick, easy reading both day and night and to eliminate glare spots.

16. Make sure the windshield wiper blades are in good condition and the wiper arms properly adjusted for tension. Replace worn blades as soon as streaking occurs.

17. Learn how to operate the climatic controls of your vehicle to insure against sudden fogging of the inside windows while driving.

18. Get both sufficient rest and sleep BEFORE starting on long trips. Remember: Your eyes get tired like the rest of your body and should also be rested.

19. On trips, make rest stops at least every hour or two to reduce eye strain and fatigue. Walk around or do exercises to increase blood circulation. Your eyes and brain benefit from increased circulation more than your body. And when you wash your hands, wash around your eyes, too. This tends to awaken a sleepy individual.

20. Have your eyes examined by an eye specialist at least every two years, more often if you're 40 or over.

21. If prescribed by your doctor, simple eye exercises may be learned to help improve your peripheral vision, depth perception, etc.

22. Train yourself to move your head and eyes continuously while driving so that your good "center" vision isn't tunneled straight ahead. Bear in mind that your eyes do not see while moving, only when stopped, and each such movement takes time; therefore, practice your scanning technique in order to safely see more things while driving. During low illumination or night driving conditions, focus your eyes a little to either side of an object rather than directly on it to get a clearer impression. Conversely, during bright daylight, look directly at what you are trying to see.

23. Maintain a balanced diet, including foods which are good for your eyes and especially for night vision.

24. Avoid taking any drugs or other medicinal products prior to or while driving that may reduce your vision or peception.

25. Avoid driving while ill. Have someone drive you home from the doctor's or dentist's office or hospital if you have received vision-inhibiting drugs.

26. Don't drive under the influence of alcohol. It has a direct effect on the brain and eyes.

27. Don't drive if you're under the influence of narcotics, barbiturates, amphetamines, etc. Marijuana is especially noted for creating illusions in depth perception.

28. If for any reason you can't see well enough to distinguish a possible traffic hazard, don't hesitate to honk your horn long and loud to at least alert others to the possible danger. It may save your life.

29. Don't be too proud or stubborn to utilize the visual assistance of your wife, husband, friend, or even one of your children in the seat beside you. Make it a "fun thing"—call one your "navigator." Four eyes are better than two any time!

About MISS DRIVER

(See back cover)

Karen Murnane is a student in Fontana, California. She likes to water ski, dance, swim, play tennis, and do gymnastics. Karen told DRIVER that one of her best friends lost her life in a freeway accident because the driver she was with lost control while racing. This incident really shook Karen up and made her especially sensitive to the importance of driving responsibly.

VL 503

GOVERNMENT VEHICLES can go FARTHER

And they'd better. Because with the budget under strain, they'll have to

by JOCS JAMES JOHNSTON, USN
Naval Station Keflavik, Iceland

(far left)
Equipment Operator Second Class Roger L. Clay begins his road patrol.

(near left)
A damaged and rusting fender, caused by a broken snow chain slapping against it.

(far left)
This damaged bumper and grill was caused by an attempt to push another vehicle. A Public Works wrecker service responds to official vehicle emergencies 24 hours a day so this is needless abuse.

(near left)
On a periodic inspection of vehicles, Petty Officer Clay checks the oil and general condition of a truck he found in a parking area.

(far left)
The Repair Shop is a frequent stopping place for Petty Officer Clay. He checks the status of work and the extent of damage on vehicles to determine if a Vehicle Abuse Report is warranted.

(near left)
An official vehicle wash rack at Public Works is used more frequently since the Abuse Program was instituted, according to Petty Officer Clay.

All official U. S. Navy photographs

"Look at that truck! That's a new truck and just check those dents."

The expression of disgust comes from Roger Clay, Equipment Operator Second Class. Hands stuffed in the pockets of his Navy Sea Bees fatigues, he circles the truck, making a running commentary about the dents, accumulation of road dirt and generally sad condition of the vehicle. Then he opens the door on the driver's side and gets in.

"Only 6,000 miles on this truck. Incredible!" He looks under the hood, expresses concern over the way it closes, and then checks the oil.

"This hood is sprung and the oil is a quart low," he announces. "I wonder if they've reported the hood."

Petty Officer Clay spends at least eight hours a day driving around Naval Station Keflavik looking for vehicle abuse. His assigned truck has more than 60,000 miles on it and the engine purrs quietly. Clay maintains it himself.

"I've seen a lot of improvement in the GMVs since I began these patrols a couple of months ago. At first I was stopping almost every government vehicle on the road for one thing or another. Now sometimes I have to look all morning before I find a dis-

continued

continued

GOVERNMENT VEHICLES CAN GO FARTHER

This wind-damaged door had to be replaced. Door straps—installed in 15 minutes—can prevent such damage.

crepancy." Petty Officer Clay emphasizes that his job is one of absolute necessity and not just another idea to hassle people.

Naval Station Keflavik owns 476 vehicles, ranging from passenger sedans to snow blowers. Most are 1967 and 1968 models. When the Station was notified by the Commander, USNAF Atlantic Fleet, that current vehicle inventories will be replaced at a rate of one in 10 through 1980, conservation of equipment became more important than ever. Faced with such an announcement, most people would suggest taking every vehicle assigned and running it through the shops for a thorough overhaul. But no increase in funds could be obtained for repair of existing automotive fleets.

And so the various unit commanders set up programs to increase the use and reduce the downtime on their assigned vehicles. Tenant activities soon did the same.

At Naval Station Public Works, Petty Officer Clay was appointed "Road Patrol Petty Officer," with full authority to enforce the vehicle maintenance policies.

"Most of the problems could be eliminated with a little common sense from the drivers" Clay says. "A lot of them just don't think. They drive on snow and ice as if it were dry pavement, and they speed on bumpy roads."

Clay's day begins about 6 A.M. when he opens the Public Works Transportation Office and begins checking vehicles out to tenant activities.

"On a pre-start inspection, the driver is supposed to check the oil, tires, and general condition of the vehicle, and give the engine a chance to warm up before he drives," Clay explains. "Before we started this program, most of them wouldn't bother. Now I make sure that they do."

At 7 o'clock, Clay begins his road patrol. He looks for several different things: Speeding, dents and broken parts, broken snow chains, or chains on tires when there is no snow. He also stops vehicles that are dirty beyond reason.

Most of the minor repair work, such as broken headlights or loose mufflers, can be fixed at Public Works while the driver waits. Public Works mechanics have been on the job six days a week since the first of the year, trying to catch up on a backlog of maintenance work. They estimate that 40 per cent of the nonworking vehicles now awaiting repair are out of service because of driver abuse.

This repair work is in addition to the normal preventive maintenance checks on the vehicles. A sample preventive maintenance schedule calls for a 2,000-mile lubrication plus oil and filter change on all vehicles. At 4,000-mile intervals they are tuned and at 10,000 miles every vehicle has a major tuneup, including brake relining.

Some high-use, emergency vehicles, such as security trucks, are serviced every 10 working days.

About 5:30 in the afternoon, Petty Officer Clay checks vehicles in and inspects them for damage or abuse before accepting them from the driver. Although there has been a great improvement in condition of vehicles, he says, there's a long way to go before 100 per cent utilization of assigned vehicles is achieved.

"When I find an instance of vehicle abuse at check-in time, I report it to the Provost Marshal and he sends a letter to the driver's unit commander. The program requires a written reply reporting the action taken.

"One or two of those letters and they get tired of writing them. Maybe with education and a little application of common sense we can eliminate the letters altogether," says Clay.

LETTERS TO THE EDITOR

BACKFIRE

Address your letters to:
Editor
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LIGHTS ON?

Uh-oh! I see RM3 McCusker (May Backfire) has fallen into the same "I-believe-in-mandatory-headlights-on" trap that I once did. I agree, every biker should make himself a nuisance with daytime use of high beam (to be seen), but I heartily disagree that this should be a mandatory state law. Here's why—and correct me if I'm wrong:

If a motorcyclist gets creamed by a car in a state with a mandatory lights-on law and lives to go to court, all the motorist has to do is claim (or lie) that he didn't see the cycle because the headlight wasn't on . . . All I'm saying is that a lights-on law shifts the burden of proof to us motorcyclists if we get creamed, and we're going to lose in court what we didn't lose on the asphalt —our rear ends.

Capt. Joe Corfield, USN
CINCLANT J0193
Norfolk, VA 23511

This would probably depend on the state and situation; however, we have noticed a renewed interest in the idea of mandatory lights-on for all vehicles. There are a lot of test programs going on, where motorists are asked to use their lights during daytime on certain sections of highway, then turn them off. No doubt accident records are being gathered for comparison purposes.

ANOTHER VIEW

Having read two issues of your magazine I find it hard to believe that you haven't emphasized the importance of a motorcyclist driving with headlights on at all times, including periods of excellent visibility.

I drive a 1961 Volkswagen beetle myself, and I always drive with my lights on (broad daylight included) as a defensive measure. In Sweden, where the national safety slogan is "drive with your lights on all the time," it was determined in a statistical survey that low-beam headlight driving in daylight measurably reduced the accident rate. If you drive from Stockholm to Malmo, Sweden, on a sunny day, you will notice about 35% of the traffic flow has headlights on low beam. If it rains, just about everybody will light up.

I think if Larry Johnson in his series, "Behind the Handlebars," had included the lights-on tip, the military would be a step closer to getting on the bandwagon. At present the idea rates only odd-ball status at most military bases and with traffic councils.

DKC Raymond G. Swenson, USN
US Naval Security Group Activity
Edzell, Angus, Scotland

Numerous DRIVER articles over the years have pointed out the visual detection advantage of bike riding during daylight hours with headlights on. The point will be made again in a two-part series of articles, "See and Be Seen Driving," scheduled for our July and August issues.

HE LIKED IT

May I congratulate you on the fine article on tires in your May issue. It was the best one I have read on the subject, covering the various aspects of tire purchase and use of the different types in a comprehensive yet understandable fashion. I thoroughly enjoy the many outstanding features of DRIVER and it seems to get better with the passage of time.

LCDR D. M. Snider, USN
Naval Air Station, Memphis
Millington, TN 38054

RALLYING

I liked the article in the March issue about car rallies. I might add for the benefit of readers put off by the prospect of all the careful computation required in a "time-distance" rally that there is another kind. This is called a "gimmick" rally wherein your success depends on correctly interpreting trick instructions. This type is actually more popular in the San Francisco Bay area than the one your article covered. Of course, the participants in both types must decide if the expenditure of several hours' worth of gas in the present energy situation is worth the entertainment it provides.

LTjg Paul D. Thayer, USN
Naval Schools Command
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TIRE FACTS

A few afterthoughts to your fine article about tires (May issue). Although bias tires do generally provide the least tread life of the three types mentioned, they may not always be the highest cost-per-mile tire. For example, a bias-belted tire that costs $40 and lasts 30,000 miles is no better a value in tread life than a bias tire that lasts 15,000 miles and costs $20. The moral is to check tread life guarantees and shop around for price . . .

Speaking of prices, do you recommend buying tires advertised as "blemished"? I bought four and estimate I saved 25-30%. There were no visible defects but I was wondering if I was compromising safety. What are blemish criteria?

One final note—if buying tires larger than your factory-equipped tires, be sure to have your speedometer calibrated . . .

Lt Daniel H. Kaplowitz, USAF
57th Fighter Weapons Wing (TAC)
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Right you are on cost. The info in our article is accurate but general—shop around for your personal best price. Blemish tires are a good buy because a blemished tire must meet the same safety standards as any other tire sold. "Blemish" usually means a cosmetic defect such as a bad whitewall. And we should have mentioned again that going to larger-than-standard tires will affect your speedometer reading and just might get you a traffic ticket you didn't expect. If you install oversize tires, have your speedometer calibrated.

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KAREN
MURNANE

Miss DRIVER

"If you care about your car and about your driving, you'll periodically check the shock absorbers. Bad shocks can really ruin a car's handling and tires, and even result in an accident. Here's one easy way to test the shocks: "Push down with your full weight at a point on the car body over each wheel. Abruptly release the pressure and watch to see if the car levels itself immediately. If it doesn't—you've got problems. But remember shocks are inexpensive to replace and often easy to do yourself. "By the way, whenever your car is up on a rack, be sure to look over each shock to make sure it's not damaged or leaking—two more indications it needs to be replaced."